

REMARKS/ARGUMENTS

Claims 1-9 stand in the present application, claim 1 having been amended and new claims 5-9 having been added. Reconsideration and favorable action is respectfully requested in view of the above amendments and the following remarks.

In the Office Action, the Examiner has rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Japan ('495). Applicant respectfully traverses the rejection.

According to the cited reference, to adjust a fuel ignition timing by changing a phase of a fuel injection cam 14, the camshaft 11 is axially moved through the bearing 16b by making the slide ring 17a rotate relatively to the slide ring 17b which is fixed to the pump chamber rear wall 1d so that the slide rings 17a and 17b come close to or apart from each other. Once completing the relative rotational adjustment of the slide rings 17a and 17b, the slide ring 17b is fixed to a boss 1d of the pump chamber rear wall 1b by bolts 20 so that the slide rings 17a and 17b and the bearing 16b constitute the stopper surface.

Accordingly, a disk shaped member of the camshaft 11 comes in slidable contact with and is pressed against the bearing 16b when the helical gear 12 is driven by an idle gear 13. In this case, vibration of the bearing 16 generated by holding the camshaft 11 is directly transmitted to the disk shaped member, which results in promoting frictional wear between the bearing 16b and the disk shaped member.

According to the present application, an object of Applicant's invention is to provide a construction that is unlikely to cause frictional wear as described at page 3 of the present specification. To achieve the object, the disk shaped member is provided at

a portion of the camshaft axially spaced apart from the portion of the camshaft which is held by the bearing so that the disk shaped member does not contact with the bearing, as defined in amended claim 1.

Further, the disk shaped member is sandwiched between the housing body and the bearing cover without contacting the bearing, as defined in newly added claim 5.

Moreover, since the stopper surface is provided at an end surface of one of the housing body and the bearing cover, as defined in new claim 5, assembly of the camshaft to the housing body and to the bearing cover is easy.

In particular, when the disk shaped member is accommodated in a cylindrical recess of the bearing cover, as defined in newly added claim 7, the bearing cover can be fixed easily to the housing body after a part of the camshaft including the cam is inserted into the housing body and, then, the bearing cover having the bearing is inserted into another part of the camshaft.

To prevent the hammer noise, axial distance of the cylindrical recess can be easily adjusted by making the disk shaped member contact with the stopper surface via the washer, as defined in newly added claim 8.

Furthermore, to reduce the frictional wear of the stopper surface and the disk shaped member, the outer diameter of the disk shaped member is larger than that of the cam, as defined in newly added claim 9.

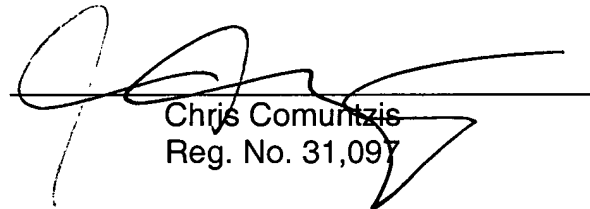
Accordingly, in view of the very significant structural differences between Applicant's invention and the cited reference, all of claims 1-9 are believed to patentably define over the cited reference.

Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all of claims 1-9, standing in the application, be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be resolved through either a supplemental response or an Examiner's amendment, the Examiner is respectfully requested to contact the undersigned at the local telephone exchange indicated below.

Respectfully submitted,

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